

LWS -

Assumptions Regarding the Preparation of the 12 Yr CIP Gap Projections

12/13/02

General

Comp Plan Population Projections	327,306 for 2025
Average Residential Use	93 gallons per capita per day
Average System Use	160 gallons per capita per day
Peaking Factor Return Ratio	12 years
Max Day to Average Day Ratio	2.7
Max Hour to Average Day Ratio	4.4

Supply, Treatment & Transmission

Provide for Max Day Demands	141 Million Gallons per Day (MGD) for 2025
Continued removal of iron and manganese, disinfection	
Does not include arsenic removal or UV disinfection	
Add Treatment Facilities in minimum of 25 MGD increments	
Design for Firm Capacity - Largest component out of service	
Assume Antelope Valley Wellfield will not be a viable source long term	
New Treatment Plant Costs - \$1.00 to \$2.50 per Gallon per Day Capacity	

Pumping

Provide for Max Day Demands	Varies for each pressure district
Design for Firm Capacity - Largest component out of service	
Desirable to have two pumping stations in each pressure district	

Storage

Provide for Max Hour Demands	
Top 1/3 of Floating Storage available for diurnal variations in demands	
Middle 1/3 of Floating Storage available for fire protection	
Desirable system pressure - 45 to 100 psi, minimum system pressure - 35 psi	
Desirable to have two reservoirs in each pressure district	
New Reservoir Costs - \$0.75 to \$1.25 per Gallon Capacity	

Distribution

Provide for Max Hour Demands plus Fire Demands	
Design Standards require minimum of 16" water main grid on section lines, and 12" mains on ½ mile lines	
Replacement at a rate of 0.4% of 1,100 total miles of main per year	

Costs

New Water Main Pipe Installed	\$6.90 per foot per inch diameter,
Water Main Replacement / Rehab	\$90 per foot for 6" & 8" in residential
Prices include construction contract, utility relocations, paving removal and replacement, traffic control, engineering services, ROW, contract admin	

Large Projects Included in LWS 12 year CIP Needs

Description	Cost \$ Millions	Completed By Date
Supply & Treatment		
Collector Well on Island	\$ 7.2	2010
25 MG Treatment Plant Expansion	\$16.0	2010
Transmission		
Complete 54" Pipeline to NEPS	\$17.9	2008
54" Pipeline, NEPS to Vine	\$12.3	2013
Pumping Stations & Reservoirs		
Add 2 Pumps at NEPS	\$ 2.7	2004
Complete Pioneers PS	\$ 1.0	2004
Distribution Mains		
Complete Main to Y H	\$ 2.0	2004
Complete Main to Pioneers	\$ 1.3	2004
New Main - Y H - 27 th to 56 th	\$ 2.8	2004
New Main - Y H - 56 th to 84 th	\$ 2.6	2009
43 Miles of 12" & 16" Mains	\$500,000 per mile	
16 Miles of 24" & Larger Mains	\$900,000 per mile	
General System Improvements & Rehab		
Main Replacement	\$ 2.4 per year	
Rehab Existing Wells,		
Reroof Buildings,		
Repaint Reservoirs,		
Upgrade SCADA System		
Master Planning, Etc		